

Amendments to the Drawings

Regarding Figure 3, the Examiner objected to the drawing because reference 17A was not mentioned in the description. Rather than amend the drawing to remove the reference character 17A, the Specification has been amended on page 4, line 23 as originally filed to recite “[in] order for the base station 17 to service the mobile end-user as PC 10 moves to become PC 10' and the transmitting range of base station 17, a new PPP session must be initiated by the end-user to LAC 16 associated with the base station 17 via the radio tower 17A”. No new matter is introduced by this amendment.

Regarding Figures 3 and 4, the drawings have been amended such that reference 101 corresponding to PC 10' and PC 100' respectively is now labeled as reference 101'. No new matter is introduced.

Attachment: Replacement Sheet

Annotated Marked-Up Drawings

REMARKS

With the foregoing amendments, claims 1-39 are pending in this application. In the previous office action claims 1-17 and 31-39 were allowed; claims 1, 9, 31 and 32 were objected; and claims 18-30 were rejected. Claims 1, 4-7, 9, 15, 18, 29, 31 and 32 have been amended. No new matter is introduced. Reconsideration is respectfully requested.

Claims Allowed

The Applicants thank the Examiner for allowing claims 1-17 and 31-39.

Specification

The abstract has been amended such that the number of words does not exceed 150.

The specification has also been amended to correct particular informalities identified by the Examiner.

No new matter is introduced. Entry of these amendments are respectfully requested.

Claim Objections

The Examiner objected to claims 1, 9, 18, 28, 31 and 32 for a number of informalities. The claims have been amended to overcome these objections. Applicant's respectfully request these objections to be withdrawn.

Claim Rejections – 35 U.S.C. § 112

The Examiner rejected claims 18-30 under 35 USC § 112 second paragraph as being indefinite. Specifically, the Examiner raised questions regarding the particular terminology and the consistency of the terms in claims 18 and 28.

Regarding claim 18, the preamble has been amended to recite "a system for transmitting information from a user device to a server on a computer network." The user device may be a personal computer (PC). However it may also be a general purpose computer, personal digital assistant (PDA), or a mobile telephone as recited in amended claim 28.

Claim 18 as now amended clarifies that the user device accesses a server on the computer network by reciting “the user device being connected to the LAC via a PPP (point-to-point) session for accessing a server on a computer network.” (Emphasis added)

Claim 18 as now amended clarifies that the customer premise equipment (CPE) is coupled to the user device.

Claim 18 as now amended clarifies that the CPE includes a Mobile IP mobile node for registering the Mobile IP address of the CPE with a Mobile IP home agent. The Mobile IP mobile node is also used to register a Mobile IP foreign agent associated with the base station with the home agent each time the CPE connects to a base station so that IP packets destined for the Mobile IP address of the CPE are encapsulated and forwarded to the foreign agent that corresponds to that base station.

Regarding claim 28, the Examiner objected to the use of the trademarks, Macintosh® and Unix®, as limitations in the claim to identify or describe a particular material or product. Claim 28 has been amended to remove these trademarks from the claim.

Applicants believe that the amendments to claims 18 and 28 overcome the Examiner’s rejection. Applicants respectfully request its withdrawal.

Claim Rejections – 35 U.S.C. § 103

The Examiner rejected claims 18, 20, 25-30 under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art in view of U.S. Patent 6,452,920 to Comstock. By way of the foregoing amendments, Applicants respectively traverse this rejection.

The present invention as recited in claim 18 as now amended is a system for wirelessly transmitting information from a mobile user device to a server on a computer network using the Layer 2 Tunneling Protocol (L2TP) over a Mobile IP infrastructure. Specifically, the mobile user device is coupled to customer premise equipment (CPE) that includes a Mobile IP mobile node and an L2TP Access Concentrator (LAC).

Referring to Fig. 4, in order to access the server 20 on the computer network 27, the user device 100 connects to the LAC 101 via a point-to-point (PPP) session 202. The LAC, in turn, connects to a L2TP network server (LNS) 23 over the wireless link through an L2TP tunnel 200. The user device then communicates with the server on the network by transmitting PPP frames containing IP packets over the PPP session to the LAC. The LAC 101 tunnels the PPP frames through the L2TP tunnel to the LNS 23, which terminates the L2TP tunnel and the PPP session. The LNS then forwards the IP packets 204 to the server 20 on the network.

Because the L2TP Access Concentrator (LAC) is included in the customer premise equipment (CPE) whose Mobile IP address does not change, the movement of the L2TP tunnel and the PPP session is transparent to the mobile user device and the LNS. In other words, the PPP session is not lost when the user device and CPE roam from one base station location to another.

In contrast, Comstock discloses a mobile IP infrastructure in which the L2TP Access Concentrator (LAC) is located at the foreign network (*i.e.* base station location) as opposed to at the customer premise equipment (CPE). For example, in Fig. 2 of Comstock, the LAC 222 is located in the foreign network 109 where the foreign agent 108 resides. In this infrastructure, a PPP session is established between the mobile node 112 and the LAC 222 at the foreign network 109. The LAC then tunnels this PPP session to the LNS 220 at the home network 105 of the home agent 104. However, if the mobile node 112 moves to a new base station location, the LAC at that location will have no knowledge of the previous PPP session to the LNS. Thus, new

PPP and L2TP sessions will need to be established between the end user device and the LAC and between the LAC and the LNS respectively.

Claim 18 has been amended to recite that the L2TP Access Concentrator (LAC) is included in the customer premise equipment in order to clarify that the L2TP tunnel extends from the CPE/LAC to the L2TP network server (LNS), avoiding the need for reestablishing new PPP and L2TP sessions. Comstock does not teach or suggest this feature.

For at least these reasons, claim 18 as now amended is novel and non-obvious in view of the prior art of record, and thus patentable.

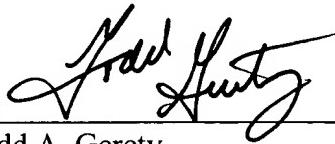
By virtue of at least their dependency on amended claim 18, claims 20, 25-30 are also believed to be patentable.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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Appl'n No.: 09/773,364
Title: Achieving PPP Mobility.....
Inventor: Howard Andrew Heller
Annotated Marked-Up Drawings

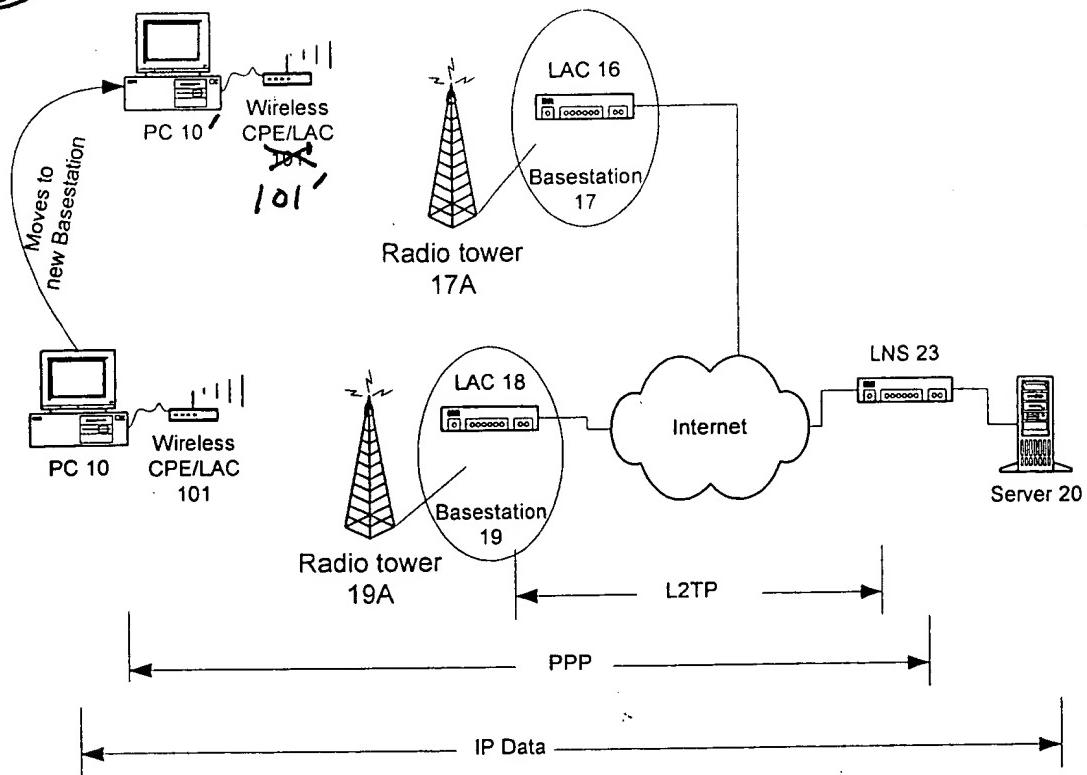


Figure 3
(PRIOR ART)



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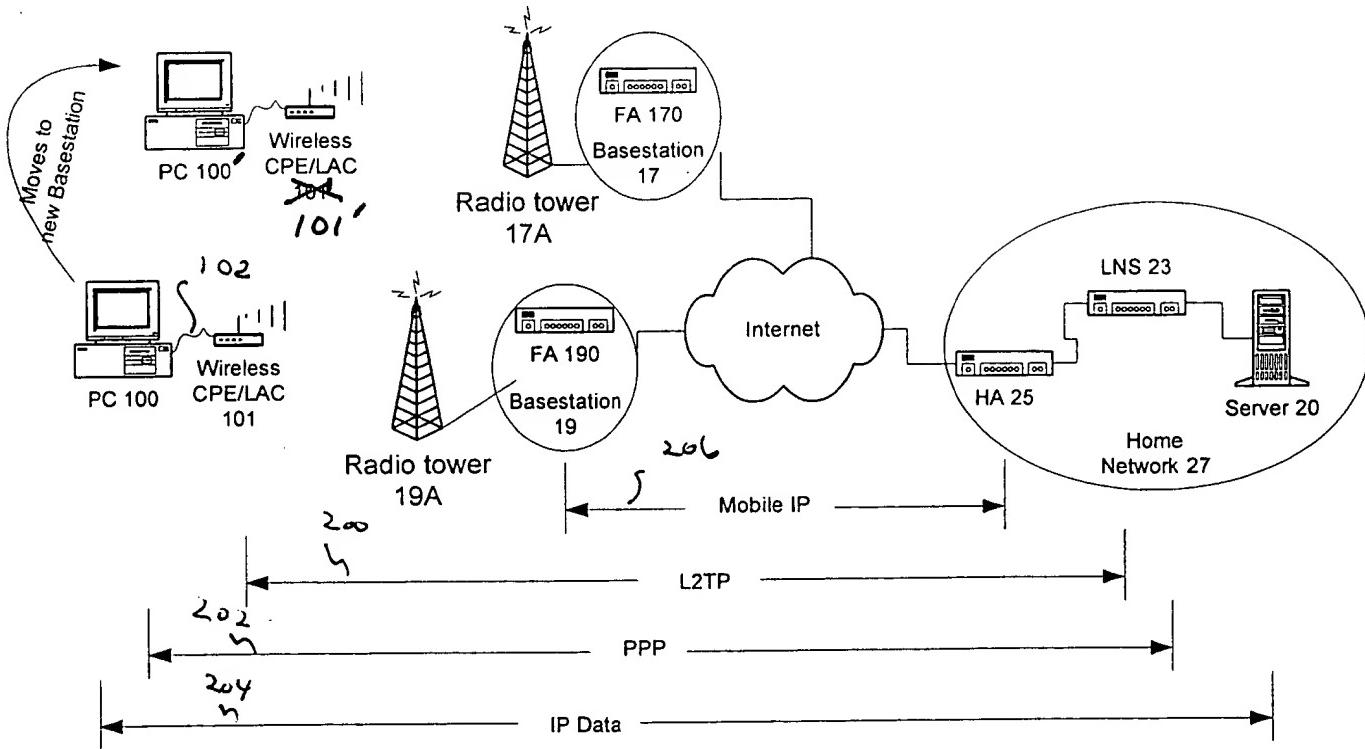


Figure 4